

Work Order ID 50131

July 8, 2009 12:49:49 PM

Page 1

Item ID: D412-664-203TRN

Accept

Revision ID: D

Item Name: Crosstube Turning Detail

Start Date: 7/10/09

Start Qty: 1.00

Required Date: 7/17/09

Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D412-664-243

Rev D

100

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio
FA166□2-Turn first side as per Folio FA166□3- File transition lines smooth.

A.M 09-09-09 ①

110

0.00



QC

QC1- Inspect dimensions to dimension sheet

Memo

0.00

Quality Control

A.M 09-09-09 ①

120

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA166□2- File transition lines smooth.□3-
Remove sand and plugs□4-Scribe part # and batch # using vibrating stilus

A.M 09-09-09 ①

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Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC1 - Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

Q.m 09 - 07 - 09 (1)

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

⇒ Sor/07/10 (1)

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Q.m 07 - 07 - 10 (1)

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Page 3

Item ID: D412-664-203TRN

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Turning Detail

Start Date: 7/10/09 Start Qty: 1.00



Cust Item ID:

Required Date: 7/17/09 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DP
9-2-13

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack ☐ Location: X-tube cel

MD 09-07-13

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/07/13 *[Signature]*
09/07/13

Picklist Print

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Page 1

Work Order ID: 50131



Parent Item: D412-664-203TRNRevD



Parent Item Name: Crosstube Turning Detail

Start Date: 7/10/09

Required Date: 7/17/09

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6009-129RevA		Manufactured	No			120	Each	26.0000	1.0000			



Crosstube Material

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	26	
34691	7	
38342	19	

1. a.m 09.07.09

6

DART AEROSPACE LTD		Work Order: 5031
Description: Crosstube Assembly (412 High Aft)		Part Number: D412-664-243
Inspection Dwg: D412-664-243 Rev: D		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.684	+0.005/-0.000	2.689	/			
	2.748	+0.005/-0.000	2.753	/			
	2.884	+0.005/-0.000	2.889	/			
	3.019	+0.005/-0.000	3.024	/			
	3.163	+0.005/-0.000	3.167	/			
	3.308	+0.005/-0.000	3.313	/			
	3.429	+0.005/-0.000	3.432	/			
	2.990	+0.005/-0.000	2.993	/			
	2.618	+0.005/-0.000	2.623	/			
	0.200	+/-0.010	0.200	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.971	+/-0.030	4.978	/			
SIDE B	2.684	+0.005/-0.000	2.689	/			
	2.748	+0.005/-0.000	2.753	/			
	2.884	+0.005/-0.000	2.889	/			
	3.019	+0.005/-0.000	3.024	/			
	3.163	+0.005/-0.000	3.167	/			
	3.308	+0.005/-0.000	3.313	/			
	3.429	+0.005/-0.000	3.432	/			
	2.990	+0.005/-0.000	2.993	/			
	2.618	+0.005/-0.000	2.623	/			
	0.200	+/-0.010	0.200	/			
	R0.063	+/-0.010	R0.063	/			
	R0.500	+/-0.010	R0.500	/			
	4.971	+/-0.030	4.978	/			
	124.09	+/-0.020	124.090	/			

Measured by: A. m	Audited by: S	Prototype Approval:	N/A
Date: 09-07-09	Date: 09/07/10	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.06.16	New Issue (P/O D412-664-203)	KJ/JLM	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	07.05.08	Tolerance updated for dimension 4.971	KJ/JLM	

DART

DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED QP	APPROVED [Signature]	DRAWING NO. D412-664-243	REV. D SHEET 1 OF 3
DATE 07.03.09		TITLE CROSSTUBE ASSEMBLY (412 HI AFT)	SCALE NTS
A	01.10.17	NEW ISSUE	
B	05.02.04	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
C	06.10.27	REMOVE D2856-600-1087, ADD D2732-058 & MAGNOBOND 6398 MS21920-32 WAS MS21920-30	
D	07.03.09	REMOVE D2732-058, CHANGE TO D3595-063-570	

RELEASE07.04.24 **[Signature]**

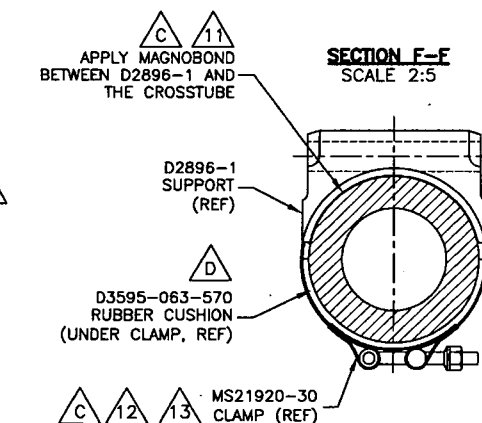
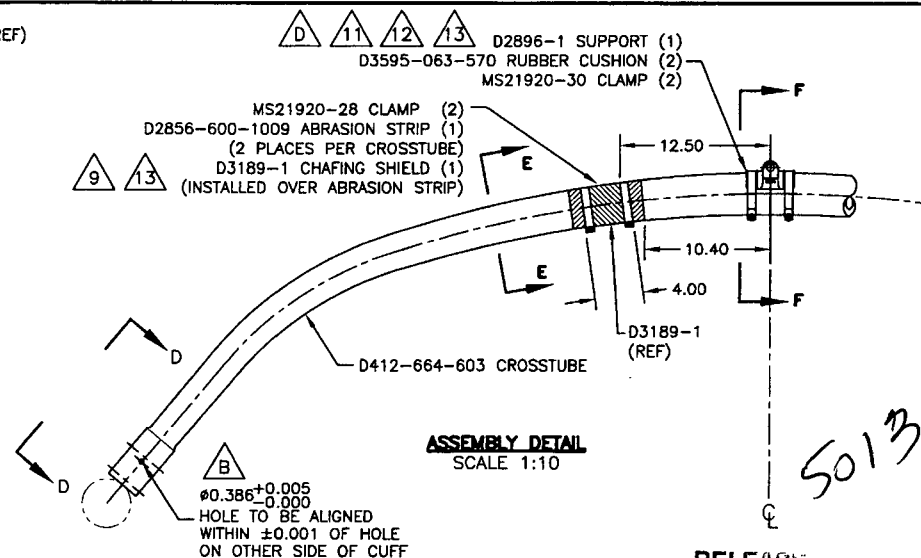
Qty	Part Number	Description
X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
1	D6009-129	CROSSTUBE
2	D3595-063-570	RUBBER CUSHION
1	D2896-1	SUPPORT
2	D2856-600-1009	ABRASION STRIP
4	MS21920-28	CLAMP
2	MS21920-30	CLAMP (OR MS21920-32)
2	D3189-1	CHAFING SHIELD
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)



w/o
50131**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 124.09±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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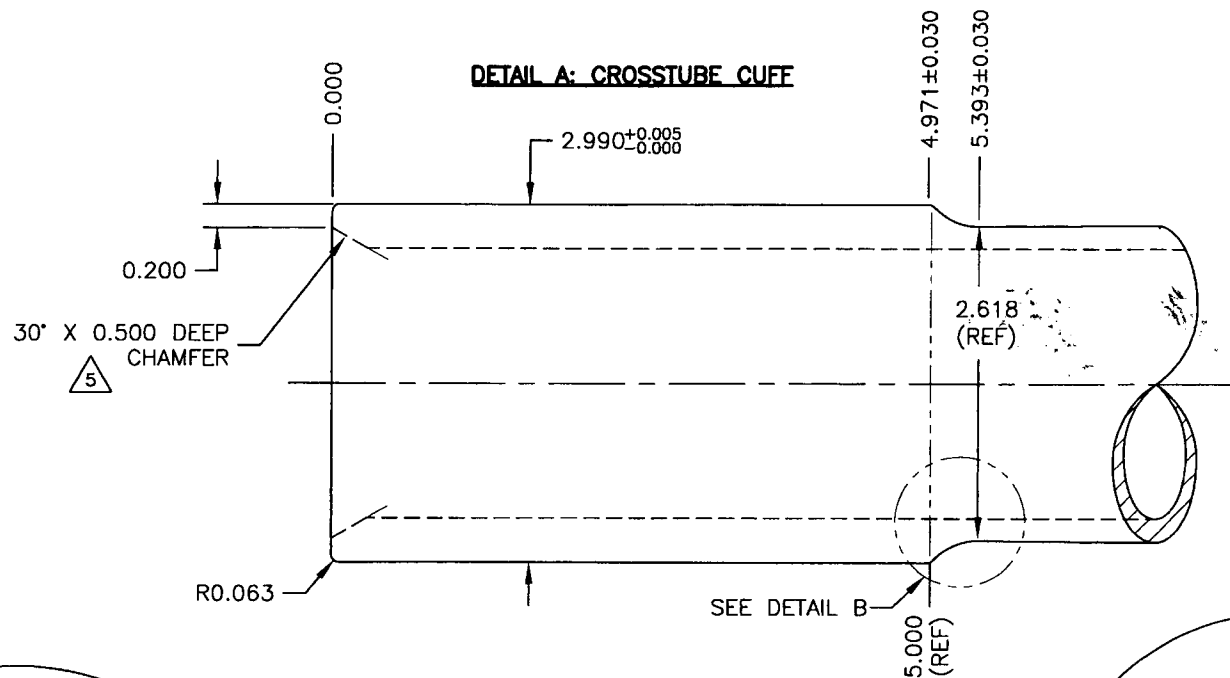


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	CHECKED	APPROVED		DRAWING NO.
	DATE			TITLE
	PH	PH		
	GP		412-664-243	REV. D
07.03.09				SHEET 2 OF 3
				SCALE
			CROSSTUBE ASSEMBLY (412 HI AFT)	1:10

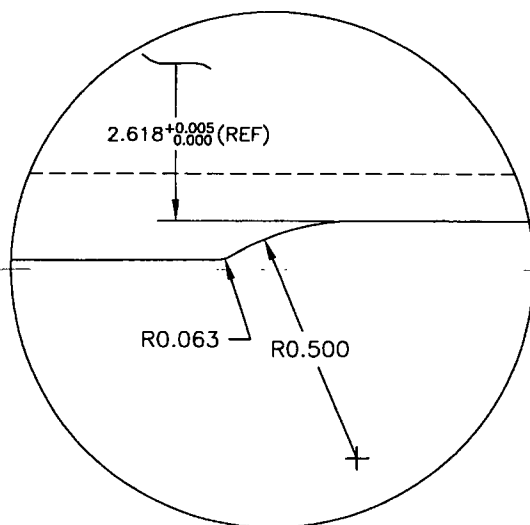
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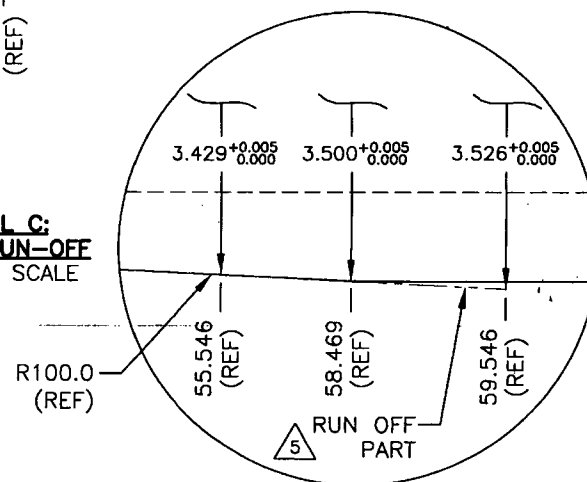
DETAIL A: CROSSTUBE CUFF



**DETAIL B: CUFF
TRANSITION
SCALE 4:1**



**DETAIL C:
TAPER RUN-OFF
NOT TO SCALE**



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HAMPSHIRE, ONTARIO, CANADA

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DRAWING NO.
D412-664-243

REV. D
SHEET 3 OF 3

DATE

07.03.09

TITLE

CROSSTUBE ASSEMBLY (412 HI AFT)

SCALE
1:1